Phosphorus, Sulfur, and Silicon and the Related Elements 1992 vol.73 N1-4, pages 153-159

Insertion of carbenes into p-h bonds. 5. f synthesis of new phosphonates and phosphinates in reactions catalysed by cu, pd, rh, ni complexes

Polozov A., Mustaphin A., Khotinen A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Cu(OTf)2 and Cu(acac)2 were found to be the most effective catalysts in the reaction of diazo compounds Ph2CN2 (1a), EtOC(O)CHN2 (lb), MeOC(O)CHN2 (1c), MeC(0)CN2C(O)OMe (1d), Cl-CH2C(O)CHN2 (1e) and CH2N2 (1f) with hydrophosphoryl compounds (MeO)2P(O)H (2a), (t-BuO)2P(O)H (2b), Ph(MeO)P(O)H (2c), (EtO)2P(O)H (2d) and (FORMULA OMITTED) resulting in P-C bond formations. Cu, Pd and Rh acetates and Ni(acac)2 have a much lower efficiency. Chlorines in Cl3CC(O)CH2P(O)(OMe)2 (3k) and Cl2CHC(O)CH2P(0)(OMe)2 (31) are reduced in the copper catalysed Atherton-Todd reaction.

http://dx.doi.org/10.1080/10426509208034441

Keywords

Catalyst, diazo compound, hydrophosphoryl compound, insertion, phosphinate, phosphonate